

## CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)

**I. (a) PLAINTIFFS**

CONTEGO SPA DESIGNS, INC.

(b) County of Residence of First Listed Plaintiff \_\_\_\_\_  
(EXCEPT IN U.S. PLAINTIFF CASES)

(c) Attorneys (Firm Name, Address, and Telephone Number)

Peacock Law P.C., Marco H. Santamaria, 201 Third  
Street NW, Suite 1340, Albuquerque, New Mexico 87102

**DEFENDANTS**Goldust Nail Lounge LLC, a New Mexico limited liability  
company

County of Residence of First Listed Defendant \_\_\_\_\_  
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF  
THE TRACT OF LAND INVOLVED.

Attorneys (If Known)

**II. BASIS OF JURISDICTION** (Place an "X" in One Box Only)

- ☐ 1 U.S. Government Plaintiff ☒ 3 Federal Question  
(U.S. Government Not a Party)
- ☐ 2 U.S. Government Defendant ☐ 4 Diversity  
(Indicate Citizenship of Parties in Item III)

**III. CITIZENSHIP OF PRINCIPAL PARTIES** (Place an "X" in One Box for Plaintiff and One Box for Defendant)

- |   | PTF                        | DEF                        |   | PTF                        | DEF                        |
|---|----------------------------|----------------------------|---|----------------------------|----------------------------|
| Citizen of This State                   | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 | Incorporated or Principal Place of Business In This State     | <input type="checkbox"/> 4 | <input type="checkbox"/> 4 |
| Citizen of Another State                | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 | Incorporated and Principal Place of Business In Another State | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Citizen or Subject of a Foreign Country | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 | Foreign Nation  | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |

**IV. NATURE OF SUIT** (Place an "X" in One Box Only)Click here for: [Nature of Suit Code Descriptions.](#)

CONTRACT	TORTS	FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES
<input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (Excludes Veterans) <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability <input type="checkbox"/> 196 Franchise	<b>PERSONAL INJURY</b> <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury <input type="checkbox"/> 362 Personal Injury - Medical Malpractice <b>PERSONAL INJURY</b> <input type="checkbox"/> 365 Personal Injury - Product Liability <input type="checkbox"/> 367 Health Care/Pharmaceutical Personal Injury Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability <b>PERSONAL PROPERTY</b> <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability	<input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881 <input type="checkbox"/> 690 Other <b>LABOR</b> <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Management Relations <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 751 Family and Medical Leave Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Employee Retirement Income Security Act <b>IMMIGRATION</b> <input type="checkbox"/> 462 Naturalization Application <input type="checkbox"/> 465 Other Immigration Actions	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 <b>INTELLECTUAL PROPERTY RIGHTS</b> <input type="checkbox"/> 820 Copyrights <input checked="" type="checkbox"/> 830 Patent <input type="checkbox"/> 835 Patent - Abbreviated New Drug Application <input type="checkbox"/> 840 Trademark <input type="checkbox"/> 880 Defend Trade Secrets Act of 2016 <b>SOCIAL SECURITY</b> <input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g)) <b>FEDERAL TAX SUITS</b> <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS—Third Party 26 USC 7609	<input type="checkbox"/> 375 False Claims Act <input type="checkbox"/> 376 Qui Tam (31 USC 3729(a)) <input type="checkbox"/> 400 State Reapportionment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 480 Consumer Credit (15 USC 1681 or 1692) <input type="checkbox"/> 485 Telephone Consumer Protection Act <input type="checkbox"/> 490 Cable/Sat TV <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 890 Other Statutory Actions <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 896 Arbitration <input type="checkbox"/> 899 Administrative Procedure Act/Review or Appeal of Agency Decision <input type="checkbox"/> 950 Constitutionality of State Statutes
<b>REAL PROPERTY</b> <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	<b>CIVIL RIGHTS</b> <input type="checkbox"/> 440 Other Civil Rights <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 445 Amer. w/Disabilities - Employment <input type="checkbox"/> 446 Amer. w/Disabilities - Other <input type="checkbox"/> 448 Education <b>PRISONER PETITIONS</b> <b>Habeas Corpus:</b> <input type="checkbox"/> 463 Alien Detainee <input type="checkbox"/> 510 Motions to Vacate Sentence <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <b>Other:</b> <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition <input type="checkbox"/> 560 Civil Detainee - Conditions of Confinement			

**V. ORIGIN** (Place an "X" in One Box Only)

- ☒ 1 Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from Another District (specify) ☐ 6 Multidistrict Litigation - Transfer ☐ 8 Multidistrict Litigation - Direct File

**VI. CAUSE OF ACTION**

Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity):  
35 U.S.C. Section 271

Brief description of cause:  
Patent Infringement

**VII. REQUESTED IN COMPLAINT:**

☐ CHECK IF THIS IS A CLASS ACTION UNDER RULE 23, F.R.Cv.P.

DEMAND \$

CHECK YES only if demanded in complaint:

JURY DEMAND: ☒ Yes ☐ No

**VIII. RELATED CASE(S) IF ANY**

(See instructions):

JUDGE \_\_\_\_\_ DOCKET NUMBER \_\_\_\_\_

DATE

Aug 12, 2024

SIGNATURE OF ATTORNEY OF RECORD

/s/ Marco H. Santamaria

FOR OFFICE USE ONLY

RECEIPT # \_\_\_\_\_ AMOUNT \_\_\_\_\_ APPLYING IFP \_\_\_\_\_ JUDGE \_\_\_\_\_ MAG. JUDGE \_\_\_\_\_

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW MEXICO**

CONTEGO SPA DESIGNS, INC.,

*Plaintiff,*

V.

GOLDUST NAIL LOUNGE LLC

*Defendant*

§ § § § § § § § § § § § § § § §

Civil Action No. 1:24-cv-00803

## DEMAND FOR JURY TRIAL

**PLAINTIFF CONTEGO SPA DESIGNS, INC.'S ORIGINAL COMPLAINT**

Plaintiff Contego Spa Designs, Inc. (hereafter “Plaintiff”), for its Complaint against Defendant Goldust Nail Lounge LLC, doing business as “Goldust Nail Lounge” (hereafter “Goldust”), alleges as set forth herein.

## **JURISDICTION AND VENUE**

1. This action arises under the United States patent laws (Title 35 of the United States Code) for the infringement of United States Patent No. 11,083,668 (hereafter "the '668 Patent"). This Court has original jurisdiction over all Causes of Action herein pursuant to 28 U.S.C. §§ 1331 and 1338.

2. This Court has personal jurisdiction over Goldust because Goldust has directly or through intermediaries, conducted business in this State and District, as further alleged herein and in association with alleged infringing activity, and, otherwise, purposefully availed itself of the benefits of doing business and maintaining minimum contacts with this District.

3. Venue is proper in this District with respect to Goldust, pursuant to 28 U.S.C. § 1400(b), because Goldust resides in this District.

4. Venue is also proper in this District with respect to Goldust pursuant to 35 U.S.C. § 1400(b), because Goldust has committed acts of patent infringement in this District and has a regular and established place of business in this District.

### **PARTIES**

5. Plaintiff is a California corporation with a regular and established place of business at 12856 Brookhurst Street, Garden Grove, California 92840.

6. Plaintiff is in the business of designing, manufacturing, importing, and selling salon spa chairs and related furniture, equipment, accessories, parts, and supplies, and has been for approximately ten years.

7. Goldust is a New Mexico limited liability company doing business as “Goldust Nail Lounge” with a regular and established place of business in this District at 10131 Coors Blvd., Suite B-1, Albuquerque, New Mexico 87114.

### **GENERAL ALLEGATIONS**

8. Upon information and belief, Goldust owns and controls the website content at <https://goldustnailounge.com/> (hereafter “Goldust Website”).

9. On August 10, 2021, the ‘668 Patent, titled “FLEXIBLE LINER WITH INNER AND OUTER LAYERS FOR USE WITH A LIQUID-RECEIVING BASIN” was issued to Lan Van Ta and Jeff Ta, as co-inventors.

10. Attached hereto as Exhibit 1 is a true and correct copy of the ‘668 Patent.

11. The ‘668 Patent is presumed valid pursuant to 35 U.S.C. § 282.

12. On March 31, 2020, Lan Van Ta and Jeff Ta executed an assignment to Plaintiff of the full and exclusive rights, title, and interest in and to the '668 Patent, including the right to sue for past royalties and past infringement (hereafter "Assignment").

13. The Assignment was recorded at the United States Patent and Trademark Office on June 21, 2021 at Reel/Frame 056599/0403. A Corrective Assignment was also recorded at the United States Patent and Trademark Office on May 18, 2023 at Reel/Frame 063693/0359, to correct a typographical error in the Patent Assignment Cover Sheet of the recordation on June 21, 2021.

14. Plaintiff is currently the owner of the full and exclusive rights, title, and interest in and to the '668 Patent, including the right to sue for past royalties and past infringement.

15. The '668 Patent generally describes a flexible liner for use with a liquid-receiving basin, such as a basin for a pedicure spa chair. The flexible liner described in the '668 Patent comprises a first body of flexible plastic having an inner face and an opposing outer face. The first body of flexible plastic has a base and a wall extending from the base configured to form a receptacle to be placed in a basin for containing a liquid such that the outer face of the first body of flexible plastic rests against an inside surface of the basin. The first body of flexible plastic is configured to delimit an interior volume of the receptacle for containing liquid in the basin and isolating the liquid from the basin. A second body of flexible plastic is joined to the inner face of the base of the first body of flexible plastic. The second body of flexible plastic forms an air conduit along the base. The second body of flexible plastic has a plurality of openings therethrough which provide a fluid pathway from the air conduit to the interior volume of the receptacle. A flexible tube has a first attached to the second body of flexible plastic such that the first end is in fluid communication with the air conduit, and a free end configured to be coupled

to a source of pressurized air. In use, the flexible liner is inserted into a basin, such as a pedicure spa basin, and the flexible tube is connected to an air source. The air source forces air through the conduit and out of through the openings which creates streams of bubbles in the liquid (e.g., water) held with the flexible liner inserted into the basin. In a foot basin of a spa chair, this provides a fluid massage to a user's feet inserted into the basin. The flexible liner isolates the liquid in the basin (e.g., a soaking solution) from the basin thereby avoiding contamination between users and/or reducing the need for sanitizing the basin.

16. The '668 Patent describes that such flexible liners may be used in salon spa chairs having a foot basin which are typically used for cosmetic procedures such as pedicures.

17. Plaintiff has marked its own products covered by the '668 Patent in accordance with 35 U.S.C. § 287.

18. Plaintiff has been and continues to be damaged by the acts of infringement of the '668 Patent alleged herein, in an amount to be proven at trial.

19. Plaintiff has been and continues to be irreparably harmed by the acts of infringement of the '668 Patent alleged herein.

20. Upon information and belief, the acts of infringement of the '668 Patent alleged herein have been willful, because such infringement has been and is deliberate and intentional.

**FIRST CAUSE OF ACTION AGAINST GOLDUST**  
**Direct Infringement of U.S. Patent No. 11,083,668**

21. Plaintiff incorporates herein each of the foregoing allegations, and the allegations which follow.

22. In violation of 35 U.S.C. § 271(a), Goldust has, without authority from Plaintiff, used in the United States, and imported into the United States, within this District, and continues

to use in, and import into, the United States within this District, products (hereafter “Accused Products”) that include each and every limitation of at least one claim of the ‘668 Patent.

23. The use and continued use of Accused Products by Goldust infringes at least Claims 1-10 and 12-19 of the ‘668 Patent (hereafter “Currently Asserted Claims”).

24. The Accused Products include but are not limited to flexible liners purchased and used by Goldust. On information and belief, Goldust purchases and imports the Accused Products from DoShower company located in China.

25. Attached hereto as Exhibit 2 are photographs of an Accused Product (turned inside out to better show the elements of the flexible liner) used by Goldust at its Goldust Nail Lounge. The Accused Products shown in Exhibit 2 was obtained at the Goldust Nail Lounge.

26. The Accused Products shown in Exhibit 2 include a first body of flexible plastic having an inner face and an opposing outer face. The first body of flexible plastic has a base and a wall extending from the base configured to form a receptacle to be placed in a basin for containing a liquid such that the outer face of the first body of flexible plastic rests against an inside surface of the basin. The first body of flexible plastic is configured to delimit an interior volume of the receptacle for containing liquid in the basin and isolating the liquid from the basin. A second body of flexible plastic is joined to the inner face of the base of the first body of flexible plastic. The second body of flexible plastic forms an air conduit along the base. The second body of flexible plastic has a plurality of openings therethrough which provide a fluid pathway from the air conduit to the interior volume of the receptacle. A flexible tube has a first attached to the second body of flexible plastic such that the first end is in fluid communication with the air conduit, and a free end configured to be coupled to a source of pressurized air.

27. Attached hereto as Exhibit 3 are photographs showing an Accused Product being used by Goldust at the Goldust Nail Lounge. As shown in Exhibit 3, Goldust inserts the Accused Products into the basin of the salon spa chairs installed at Goldust Nail Lounge to provide pedicures and/or other nail salon services to its customers. The photographs in Exhibit 3 show an Accused Product being used by being inserted into a basin of the salon spa chair and being filled with water. The customer's feet are then inserted into the Accused Product in the basin.

28. Exhibits 2-3 show that Goldust has used, and continues to use, the Accused Products for providing pedicures and/or other nail salon services to its customers.

\*\*\*\*\*

WHEREFORE, Plaintiff respectfully requests judgment as follows:

A. Pursuant to 35 U.S.C. § 283, the Court enjoin Defendant, its subsidiaries, divisions, agents, servants, and employees, and those persons in concert or active participation with any of them, from further acts of infringement of the '668 Patent.

B. Pursuant to 35 U.S.C. § 284, Plaintiff be awarded damages, interest, and costs, including treble damages.

C. Pursuant to 35 U.S.C. § 285, the case be declared exceptional, and Plaintiff be awarded reasonable attorney fees.

D. Plaintiff be awarded pre-judgment and post-judgment interest according to law.

E. Plaintiff be awarded such other relief as this Court deems appropriate.

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Dated: August 12, 2024

Respectfully Submitted,

/s/ Marco H. Santamaria

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**ATTORNEYS FOR PLAINTIFF  
CONTEGO SPA DESIGNS, INC.**



**JURY DEMAND**

Pursuant to F.R.Civ.P. Rule 38(b), Plaintiff Contego Spa Designs, Inc., demands a jury trial on all issues triable to a jury.

Dated: August 12, 2024

Respectfully Submitted,

/s/ Marco H. Santamaria

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**ATTORNEYS FOR PLAINTIFF  
CONTEGO SPA DESIGNS, INC.**



US011083668B2

(12) **United States Patent**  
**Ta et al.**

(10) **Patent No.:** **US 11,083,668 B2**

(45) **Date of Patent:** **\*Aug. 10, 2021**

(54) **FLEXIBLE LINER WITH INNER AND OUTER LAYERS FOR USE WITH A LIQUID-RECEIVING BASIN**

(71) Applicant: **Contega Spa Designs, Inc.**, Garden Grove, CA (US)

(72) Inventors: **Jeff Ta**, Garden Grove, CA (US); **Lan Van Ta**, Garden Grove, CA (US)

(73) Assignee: **Contega Spa Designs, Inc.**, Garden Grove, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **17/153,642**

(22) Filed: **Jan. 20, 2021**

(65) **Prior Publication Data**

US 2021/0137782 A1 May 13, 2021

**Related U.S. Application Data**

(63) Continuation of application No. 17/020,258, filed on Sep. 14, 2020, which is a continuation of application No. 16/227,711, filed on Dec. 20, 2018, now Pat. No. 10,792,218, which is a continuation of application No. 14/962,930, filed on Dec. 8, 2015, now Pat. No. 10,195,108.

(51) **Int. Cl.**  
**A61H 33/02** (2006.01)  
**A61H 35/00** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **A61H 35/006** (2013.01); **A61H 33/02** (2013.01); **A61H 2205/12** (2013.01)

(58) **Field of Classification Search**

CPC .. A61H 33/02; A61H 33/0087; A61H 35/006; A61H 2205/12

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,663,178 A	12/1953	Schwartz	
3,814,399 A *	6/1974	Melreit .....	A61H 33/025 261/124
4,151,618 A	5/1979	Carpenter	
5,886,323 A	3/1999	Hivale	
6,772,800 B1	8/2004	Garcia	
7,895,685 B2	3/2011	Vinokur et al.	
8,387,175 B2	3/2013	Vinokur et al.	
8,763,174 B2 *	7/2014	Vinokur .....	A61H 35/006 4/622

(Continued)

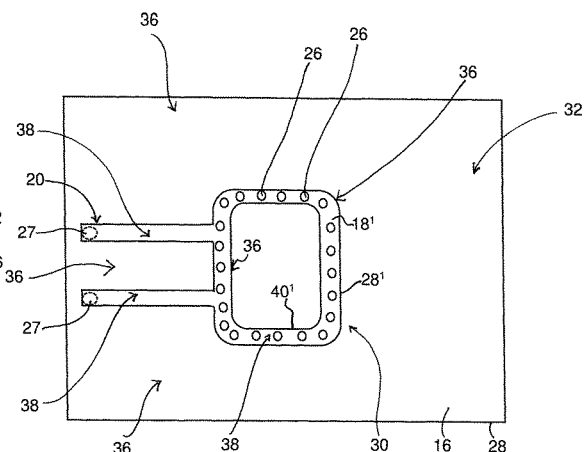
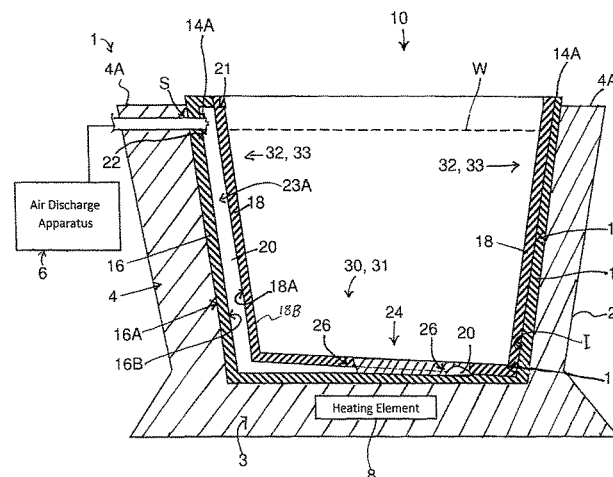
*Primary Examiner* — Erin Deery

(74) *Attorney, Agent, or Firm* — Christopher J. Dynowski; Miller Law Group, PLLC

(57) **ABSTRACT**

A liner for use with a basin to contain a liquid features a plurality of bodies of flexible plastic. Portions of an inner face of a first body of flexible plastic are joined to corresponding portions of an inner face of a second body of flexible plastic, through which a plurality of openings are formed, to provide a multi-layer body of flexible plastic. Other portions of the inner face of the first body of flexible plastic are not joined to corresponding other portions of the inner face of the second body of flexible plastic, defining an air conduit between the first body of flexible plastic and the second body of flexible plastic for guiding pressurized air substantially from an air discharge apparatus.

**20 Claims, 9 Drawing Sheets**



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(56)

**References Cited**

U.S. PATENT DOCUMENTS

2004/0199994	A1	10/2004	Sherif et al.
2009/0094735	A1	4/2009	Tran
2009/0106889	A1	4/2009	Brown
2009/0276951	A1	11/2009	Tran

\* cited by examiner

FIG. 1A

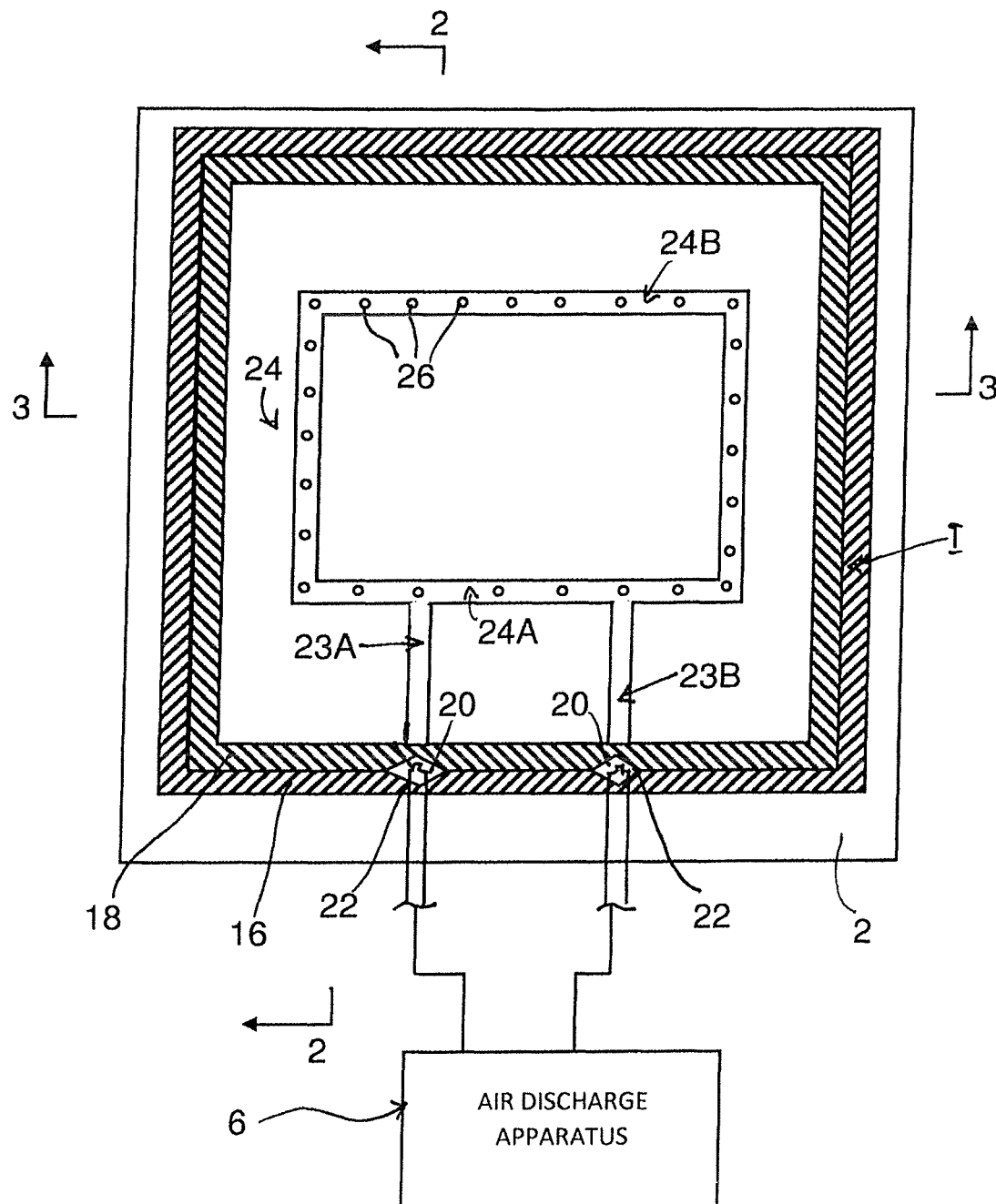
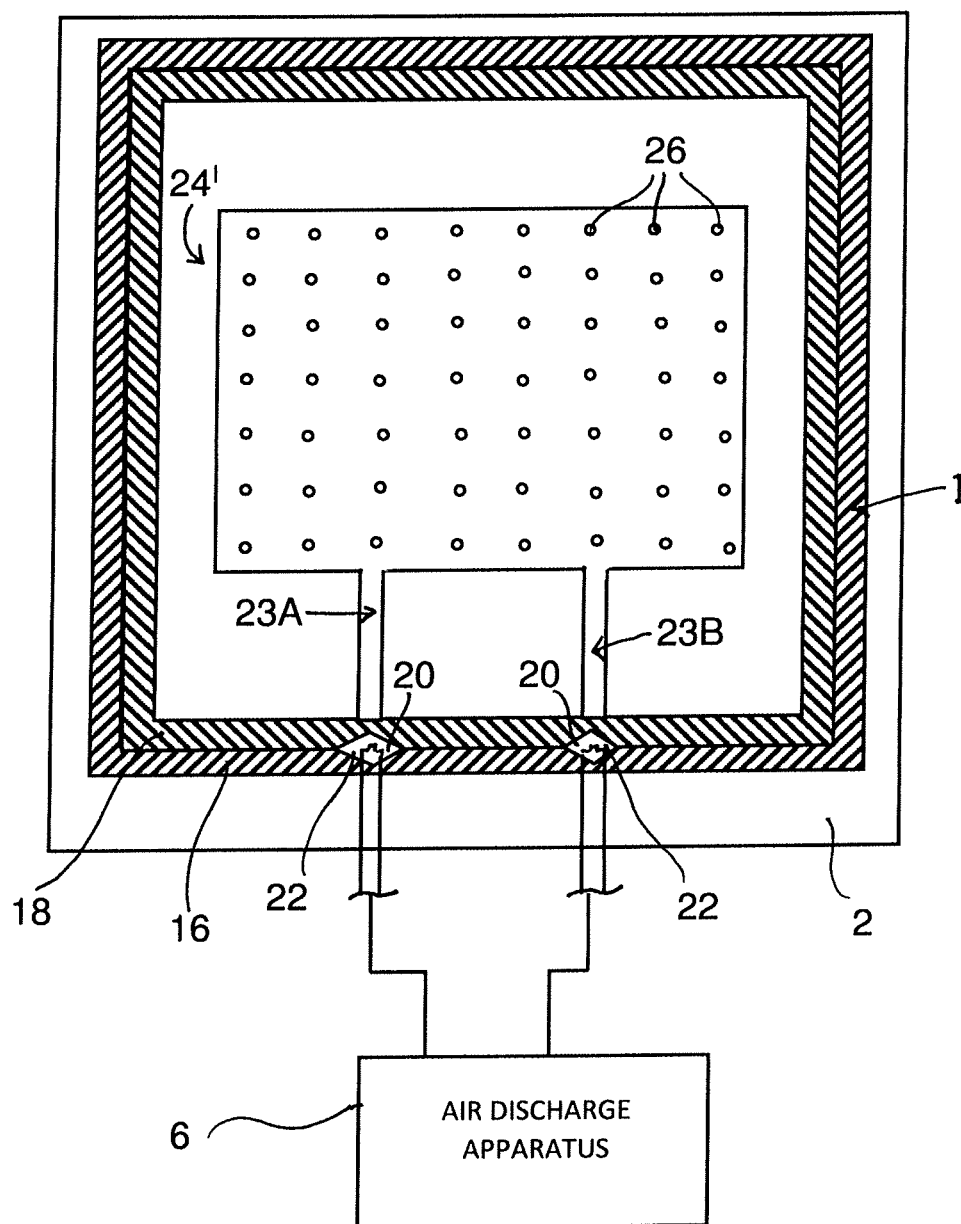


FIG. 1B



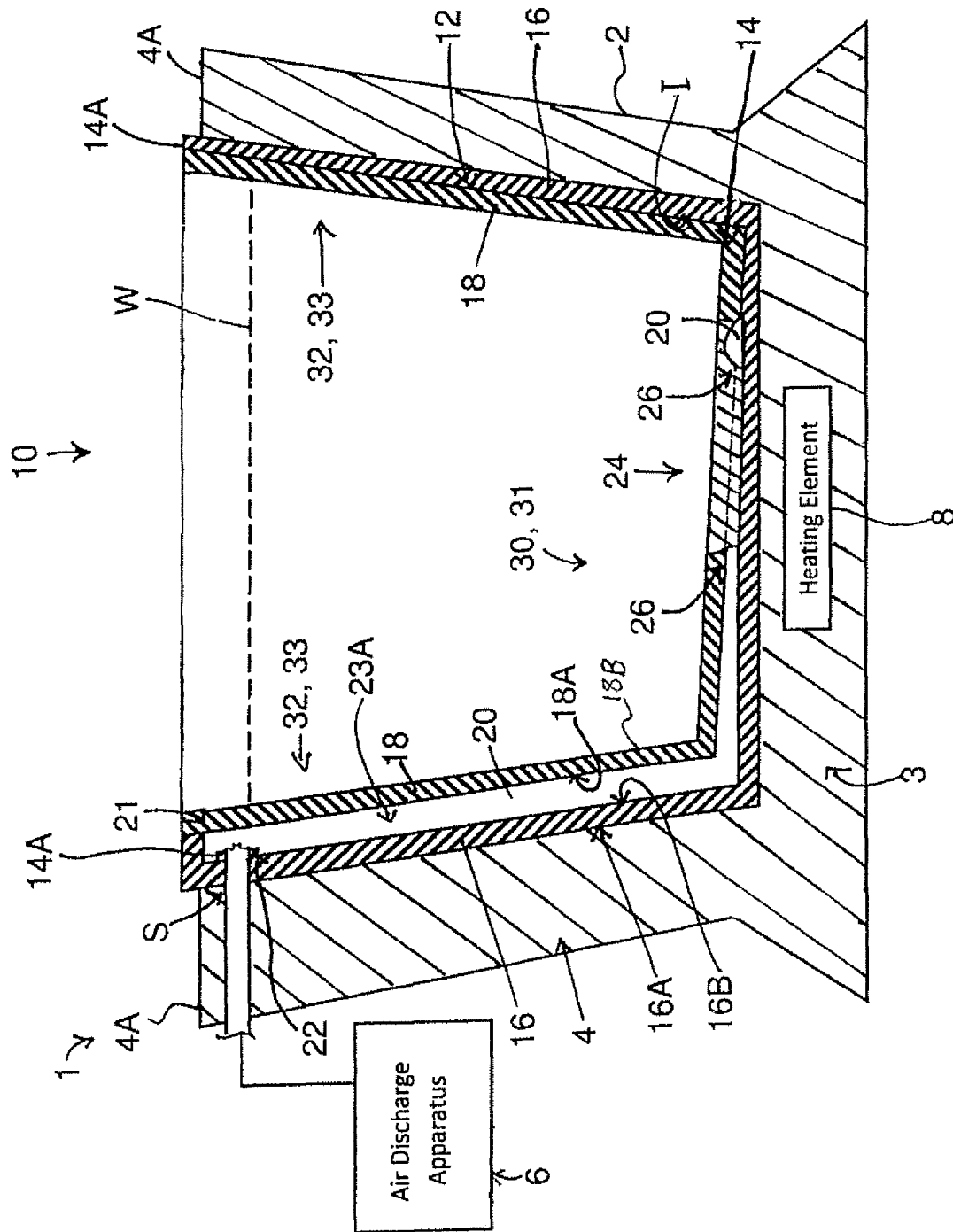


FIG. 2A

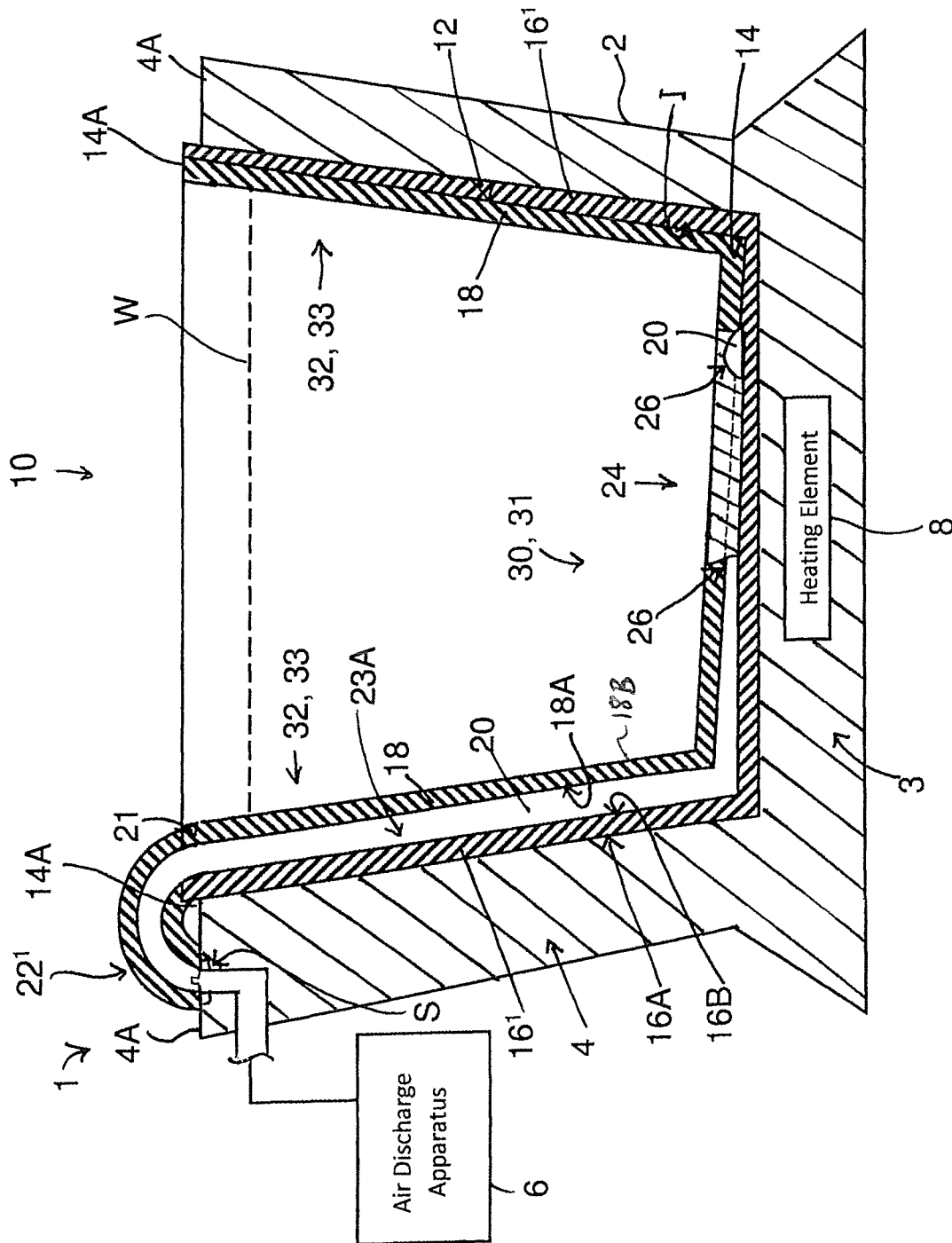


FIG. 2B

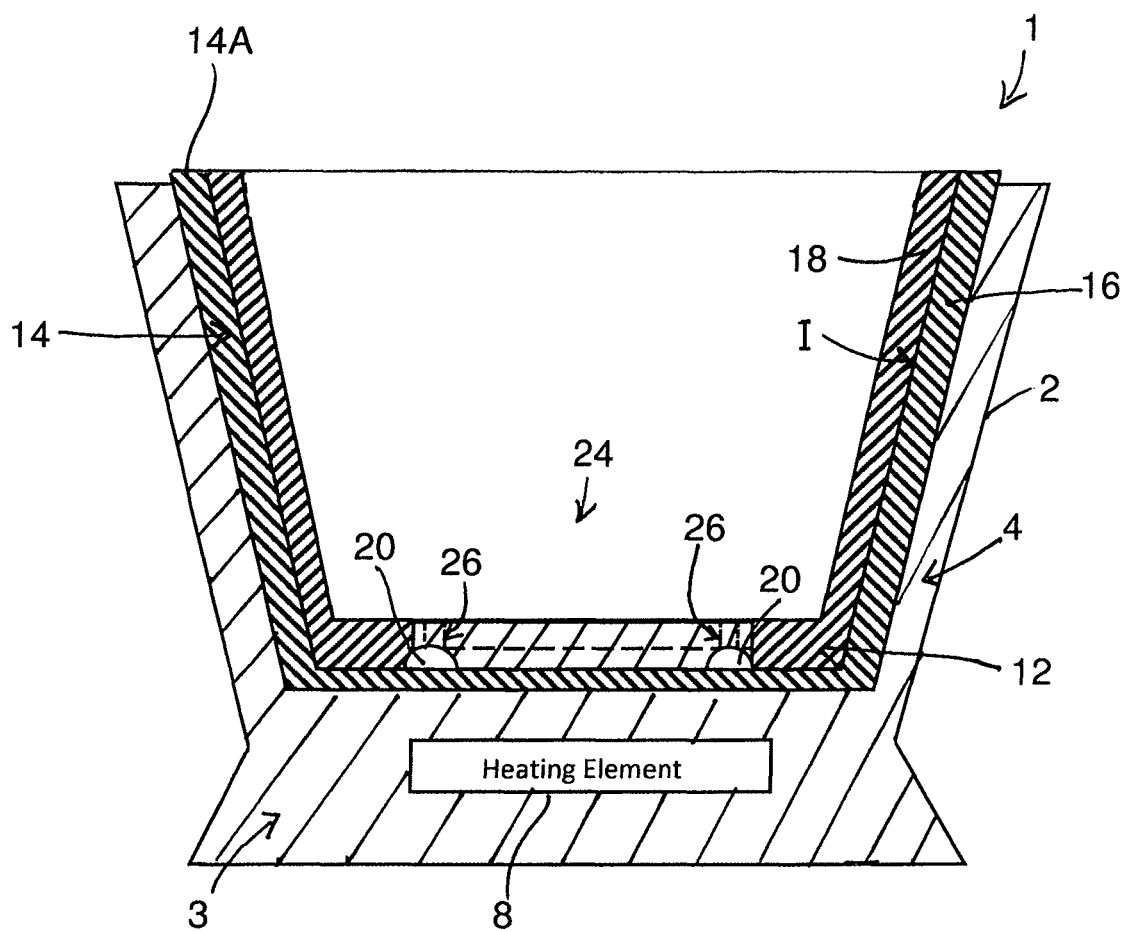


FIG. 3



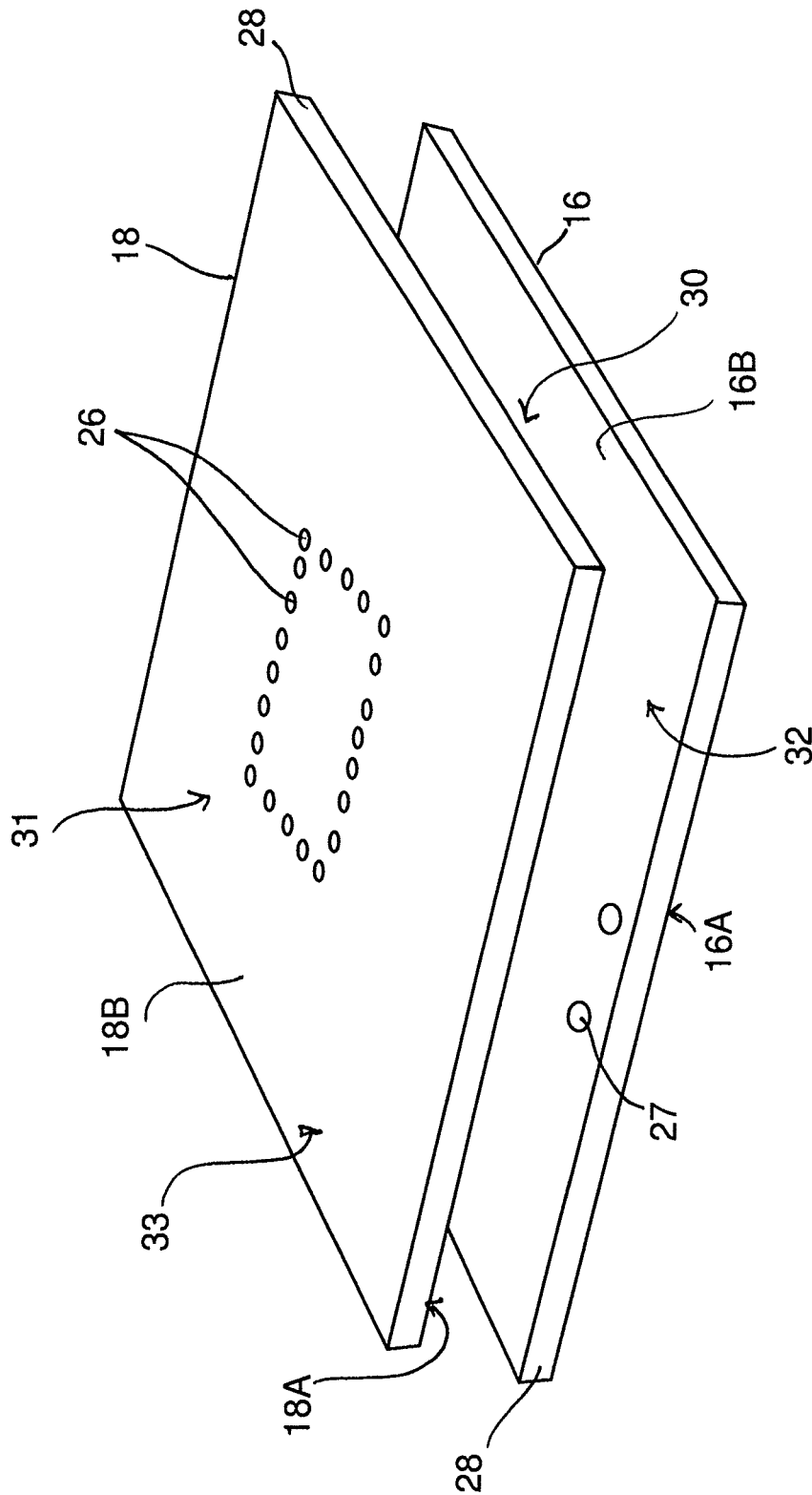


FIG. 4

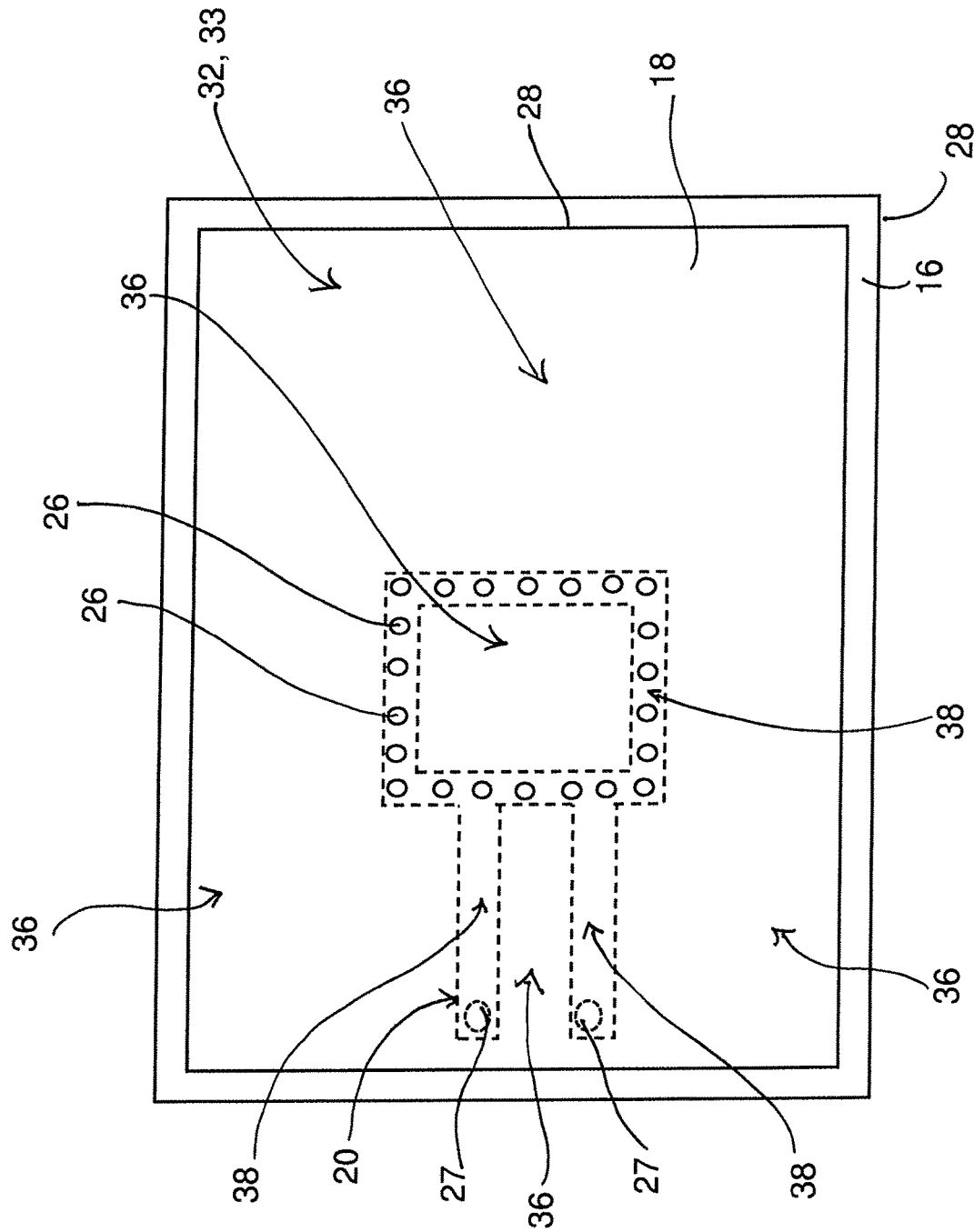


FIG. 5

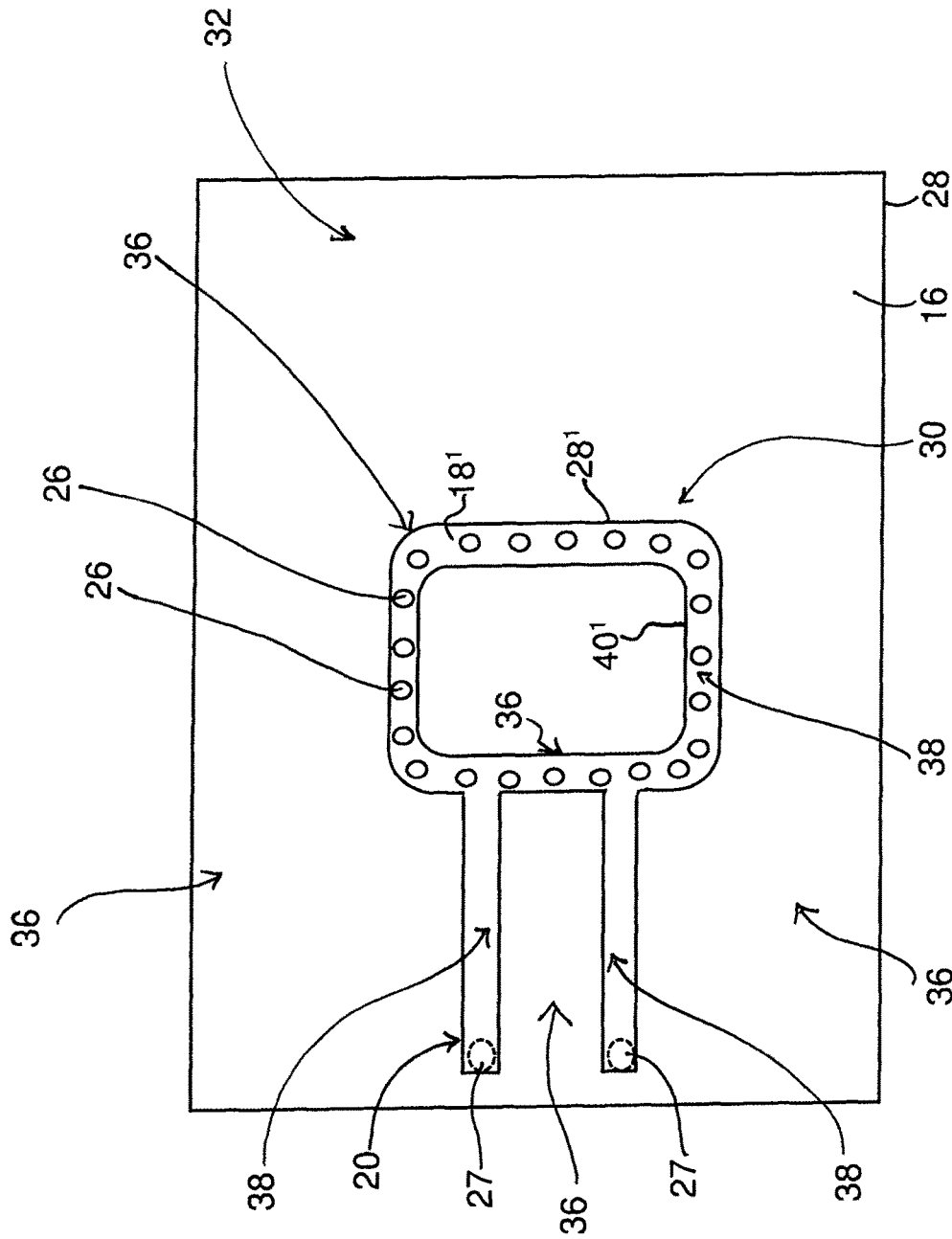


FIG. 6

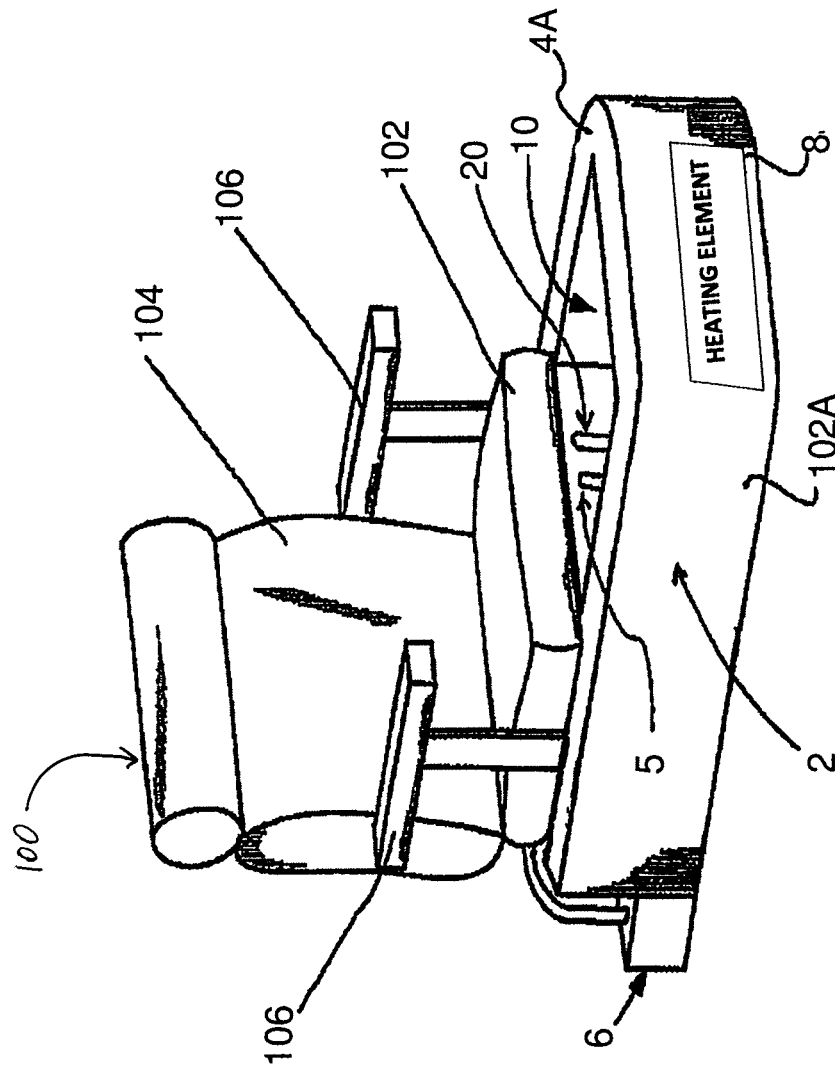


FIG. 7

US 11,083,668 B2

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# **FLEXIBLE LINER WITH INNER AND OUTER LAYERS FOR USE WITH A LIQUID-RECEIVING BASIN**

This application is a Continuation application of U.S. patent application Ser. No. 17/020,258 filed Sep. 14, 2020, which is a continuation of U.S. patent application Ser. No. 16/227,711 filed Dec. 20, 2018 now issued as U.S. Pat. No. 10,792,218, which is a continuation of U.S. patent application Ser. No. 14/962,930 filed Dec. 8, 2015 now issued as U.S. Pat. No. 10,195,108.

## **FIELD OF THE INVENTION**

The present invention relates generally to liners for foot spas, and more particularly to liners having air passageways for providing a fluid massage feature of the foot spa.

## **BACKGROUND**

Foot spas are relatively commonplace in the spa industry for providing pedicures. When used in a salon setting where a plurality of customers one after another will share a single foot spa unit over the course of a business day, disposable one-time-use liners are employed for insertion into the respective foot spa so as to contain a soaking solution used for a respective client. That is, the respective liner is intended to isolate the soaking solution from the soaking basin, so that bacteria may not be transferred from one user to the next. Therefore, only the liner may have to be replaced in order to prepare the foot spa for a subsequent user, without necessarily having to clean the soaking basin to remove residue of the soaking solution and thus without concern about transfer of contaminants from one user to the next.

Therefore, use of disposable liners may enhance hygienic practices in the spa industry by reducing need for sanitizing the soaking basin. Furthermore, use of disposable liners may enhance practices for prevention of infection such as by providing a relatively inexpensive arrangement which is disposable, so that those elements of the pedicure treatment which are contaminated by the feet of the respective patient can be discarded thereby removing possibility of contaminating the next patient.

As known to those with ordinary skill in the art, not only are these foot spas suited for providing therapeutic soaking of the user's feet, many such spas are arranged to provide a soothing massage of the feet while the user relaxes his/her feet in a soaking basin of the foot spa during the therapeutic soak. The massage may be provided by vibratory elements which engage soles of the feet through the liner. In other cases, air may be forced through the liner so as to provide streams of bubbles for performing the massage through the fluid.

In some instances, it is more desirable to provide the bubbles for performing the massage of the feet than by means of the vibratory elements. However, it remains preferable especially in a commercial salon setting to balance performance of the foot spa, such as that characterized by its massage feature, with hygienic practices.

Additionally, the bubbles may be used for mixing the soaking solution, which may contain medicinal ingredients or into which medicinal substances may be added. As such, the bubbles conveniently provide agitation of the soaking solution so that the soaking solution may be circulated about the user's feet within the soaking basin of the spa. Thus, in the case that the soaking solution contains medicinal com-

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ponents, the agitation and circulation of the soaking solution may afford enhanced diffusion of the medicinal components in the solution and may allow the medicinal components to reach necessary areas of the user's feet.

It is therefore desirable to provide a unique solution for a liner and foot spa which provide massage and mixing features by means of bubbles and provide proper isolation of the soaking solution, from the soaking basin, and from the previous user.

## **SUMMARY OF THE INVENTION**

According to one aspect of the invention there is provided a liner for containing a soaking solution in use with a foot spa, the foot spa having (i) a soaking basin including a bottom base and an upstanding peripheral basin wall extending upwardly from the bottom base, and (ii) an air discharge apparatus arranged for supplying pressurized air at a supply location which is at or adjacent an inside face of the soaking basin, the liner comprising:

a first body of plastic forming an outer layer of the liner that has an inner face and an outer face for resting against the inside face of the soaking basin;

a second body of plastic joined to the inner face of the first body of plastic so as to form an inner layer of the liner;

the joined first and second bodies of plastic being shaped to form a receptacle having a base floor and an upstanding peripheral liner wall extending therefrom such that (i) the receptacle delimits an inside volume that is lined by the second body of plastic for holding the soaking solution, and (ii) the receptacle is arranged for nesting in the soaking basin in a working configuration;

an air conduit formed between the first and second bodies of plastic;

the air conduit extending from a starting end thereof, which is locatable at the supply location of the foot spa in the working configuration of the liner, to the base floor of the receptacle formed by the first and second bodies of plastic for guiding the pressurized air supplied from the air discharge apparatus to the base floor;

a coupling arrangement at the starting end of the air conduit for connecting to the air discharge apparatus;

a plurality of openings located in the second body of plastic and formed across a full thickness thereof for passing the pressurized air from the air conduit into the inside volume of the receptacle;

wherein the first body of plastic is imperforate from a location thereon at which the starting end of the air conduit is disposed to a free end of the first body of plastic defining a top of the peripheral liner wall so as to isolate the inside volume of the receptacle, where the soaking solution is containable, from the soaking basin in the working configuration of the liner.

In the embodiment as described in more detail hereinafter, the substantially imperforate first body of plastic provides an isolative lining between the soaking basin and the soaking solution while the perforated second body of plastic which lines the inside volume locates the openings for transferring the air into the soaking solution. The air conduit formed between the two layers of plastic may be capable of sustaining pressure of the air passed therethrough during operation of the soaking basin, without the soaking solution backing up through the air conduit in a reverse direction with respect to conventional flow of the pressurized air through the air conduit.

In one instance, the air conduit comprises a diameter which is sized in a range between 1 and 25 millimetres.

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In another instance, the air conduit comprises a diameter which is sized in a range between 1.5 and 23 millimetres.

In yet another instance, the air conduit comprises a diameter which is sized in a range between 2 and 20 millimetres.

In one arrangement, each one of the first and second bodies of plastic is flexible such that walls of the air conduit are flexible and a diameter of the air conduit is expandable in response to a pressure value of the pressurized air passed through the air conduit.

In one arrangement, the air conduit forms a chamber at its terminal end at the base floor with a wall-to-wall width arranged to span across a majority of the area of the base floor.

In another arrangement, the air conduit forms a closed loop which is located at the base floor of the receptacle.

The air conduit may comprise a plurality of supply branches converging with the closed loop, each of the supply branches having a respective one of the coupling arrangement.

Preferably, the supply branches converge with the closed loop at spaced locations separately of one another.

In one instance, there are provided two supply branches converging with the closed loop at a common side of the closed loop such that the closed loop comprises an intermediate portion between junctions with the respective supply branch and a ring portion which is longer in length than the intermediate portion.

In one arrangement, the coupling arrangement comprises a sealing gasket embedded in the first body of plastic so as to be carried at the inner face thereof.

In another arrangement, the coupling arrangement comprises a flexible tube coupled to at least one of the first and second bodies of plastic and extending from the starting end of the air conduit so as to provide an extension of the air conduit to the supply location of the air discharge apparatus.

According to one aspect of the invention there is provided a pedicure apparatus for treating feet of a user comprising:

- a foot spa including:
  - a soaking basin for receiving the feet of the user, the soaking basin including a bottom base and an upstanding peripheral basin wall extending upwardly from the bottom base;
  - an air discharge apparatus arranged for supplying pressurized air at a supply location which is at or adjacent an inside face of the soaking basin;
  - a liner installed in the soaking basin in a working configuration so as to cover the inside face of the soaking basin, the liner comprising:
    - a first body of plastic forming an outer layer of the liner that has an inner face and an outer face for resting at or adjacent the inside face of the soaking basin;
    - a second body of plastic joined to the inner face of the first body of plastic so as to form an inner layer of the liner that is segregated from the inside face of the soaking basin by the first body of plastic;

the joined first and second bodies of plastic being shaped to form a receptacle having a base floor which covers the inside face of the soaking basin at the bottom base thereof and an upstanding peripheral liner wall which covers the inside face of the soaking basin at the peripheral basin wall, with the receptacle delimiting an inside volume that is lined by the second body of plastic for holding a soaking solution into which the user's feet are inserted;

an air conduit formed between the first and second bodies of plastic;

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the air conduit extending from a starting end thereof, which is located at the supply location of the foot spa in the working configuration of the liner, to the base floor of the receptacle formed by the first and second bodies of plastic for guiding the pressurized air supplied from the air discharge apparatus of the foot spa to the base floor of the liner;

a coupling arrangement at the starting end of the air conduit for connecting to the air discharge apparatus;

a plurality of openings located in the second body of plastic and formed across a full thickness thereof for passing the pressurized air from the air conduit into the inside volume of the receptacle;

wherein the first body of plastic is imperforate from a location thereon at which the starting end of the air conduit is disposed to a free end of the first body of plastic defining a top of the peripheral liner wall which is located at a top of the peripheral basin wall so as to isolate the inside volume of the receptacle, where the soaking solution is contained, from the soaking basin in the working configuration of the liner.

According to one aspect of the invention there is provided a method of forming a liner with an air conduit that is used with a foot spa for containing a soaking solution as part of a pedicure treatment of a user's feet, the foot spa having a soaking basin for receiving feet of the user and an air discharge apparatus arranged for supplying pressurized air at a supply location which is at or adjacent an inside face of the soaking basin, the method comprising:

providing a first body of plastic having:

a surface area spanning across two opposite faces and a thickness measured therebetween;

a central body portion and a fringing body portion surrounding the central body portion with the first body of plastic being imperforate in all directions across its surface area from a predetermined starting location on the fringing body portion of the first body of plastic;

providing a second body of plastic which is sized substantially equal to the first body of plastic or smaller in size than the first body of plastic;

the second body of plastic having a surface area spanning across two opposite faces and a thickness measured therebetween;

the second body of plastic registering with at least the central body portion of the first body of plastic with the second body of plastic locating a plurality of openings formed across its full thickness;

welding the first and second bodies of plastic to one another at a first one of their respective faces with use of heat according to a prescribed heating pattern which applies heat to pre-specified areas of each body of plastic where the bodies of plastic are joined together at their first faces, with untreated areas of the surface of the first face of each body of plastic (i) registering with the predetermined starting location on the first body of plastic and the plurality of openings in the second body of plastic, and (ii) being free to separate from direct engagement with one another so that these untreated areas form the air conduit for guiding the pressurized air supplied from the air discharge apparatus of the foot spa;

arranging the first and second bodies of plastic so as to be formable into a receptacle having a base floor and an upstanding peripheral liner wall extending therefrom such that (i) the receptacle delimits an inside volume that is lined by the second body of plastic for holding the soaking solution, and (ii) the receptacle is arranged for nesting in the soaking basin in a working configuration, with the central

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body portion of the first body of plastic forming the base floor and the fringing body portion thereof forming the peripheral liner wall.

That is, it is preferred that the untreated areas form a path which is disposed between the first faces of the first and second bodies of plastic and which spans from the predetermined starting location on the fringing body portion of the first body of plastic to the plurality of openings of the second body of plastic.

In one arrangement, the untreated areas form a closed loop at the base floor which is formed by the central body portions of the first and second bodies of plastic.

In one arrangement, the first body of plastic comprises an opening formed across its full thickness at the predetermined starting location such that the first body of plastic is impermeable across its surface area with exception of said opening and the method includes a step of embedding a sealing gasket in the first body of plastic at the opening therein such that the sealing gasket is carried at the first face thereof for providing an air-tight seal during communication of the air discharge apparatus with the air conduit.

Alternatively, in another arrangement the method includes a step of welding a flexible tube in abutting engagement with a free end of at least one of the first and second bodies of plastic and in a position where the tube is adjacent the predetermined starting location and in alignment with the air conduit, whereby the flexible tube extends from a starting end of the air conduit located at the free end of said at least one of the first and second bodies of plastic and thus provides an extension of the air conduit to the supply location of the air discharge apparatus.

In the instance that the second body of plastic is sized substantially equal to the first body of plastic, the second body of plastic includes:

a central body portion and a fringing body portion surrounding the central portion;

the central body portion and the fringing body portion registering with the central and fringing portions of the first body of plastic with the central portion of the second body of plastic locating the plurality of openings;

wherein the central body portion of the second body of plastic forms the base floor of the receptacle with the central body portion of the first body of plastic and the fringing body portion of the second body of plastic forms the peripheral liner wall of the receptacle with the fringing body portion of the first body of plastic.

In one arrangement, the second body of plastic has an outer periphery which generally follows a path of the air conduit, where the air conduit traverses an area smaller than the surface area of the first body of plastic, so that a remaining surface area of the first face of the first body of plastic uncovered by the second body of plastic is exposable to the soaking solution.

The liner formed by this method may be easier and less expensive to manufacture than prior art liners for foot spas.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Preferred arrangements of the invention will now be described in conjunction with the accompanying drawings in which:

FIG. 1A is a top plan view of foot spa and liner according to the present invention showing a first arrangement thereof with a top portion of the liner removed to show an air conduit therein.

FIG. 1B is a top plan view like that shown in FIG. 1A but of a second arrangement of foot spa and liner.

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FIG. 2A is a cross-sectional view along line 2-2 in FIG. 1A of the first arrangement.

FIG. 2B is a cross-sectional view along line 2-2 like that shown in FIG. 2A but of a third arrangement of foot spa and liner.

FIG. 3 is a cross-sectional view along line 3-3 in FIG. 1A.

FIG. 4 is a perspective view of first and second bodies of plastic of liner according to the present invention where the bodies of plastic are shown separated from one another.

FIG. 5 is a top plan view of the first and second bodies of plastic of FIG. 4 where the bodies of plastic are shown overlaid one on top of the other so as to better illustrate treated and untreated areas of the bodies of plastic when they are joined together.

FIG. 6 is a top plan view like that in FIG. 5 but of another arrangement of first and second bodies of plastic where the bodies of plastic are sized substantially differently in size.

FIG. 7 is a perspective view of a spa chair comprising a foot spa and liner according to the present invention.

In the drawings like characters of reference indicate corresponding parts in the different figures.

#### DETAILED DESCRIPTION

Referring to the accompanying figures, there is illustrated a liner that is generally indicated by reference numeral 10, which is suited for use with a foot spa 1. As will be described in more detail hereinafter, the liner is arranged for nesting in a soaking basin 2 of the foot spa in a working configuration of the liner so as to fit in the soaking basin and cover an inside face of the soaking basin, with the soaking basin providing structural support for the liner. Thus, the liner 10, which is disposable so as to be suited for one-time use, provides a generally basin-shaped receptacle with a base floor 12 and raised peripheral receptacle wall 14 extending from the base floor for containing a soaking solution in isolation of the soaking basin 2 of the foot spa 1.

The soaking basin 2, which is suited for receiving feet of a user, comprises a bottom base 3 and an upstanding peripheral basin wall 4 extending upwardly from the bottom base. In the illustrated embodiment, the bottom base and the basin wall are unitary so as to form a single solid body.

An air discharge apparatus 6 (schematically shown) is provided with the foot spa 1 for generating pressurized air. This air discharge apparatus (including an air pressurization device and tubing/ducting extending therefrom) may be housed entirely within the soaking basin, such as in the bottom base thereof. In the illustrated embodiment, the air discharge apparatus comprises an air pump; in other embodiments, the air discharge apparatus may comprise a suitable air blower. The air discharge apparatus draws ambient air from outside the soaking basin 2 and supplies the pressurized air formed by the air discharge apparatus at a supply location S which is at or adjacent the inside face of the soaking basin. Note that it is the inside face of the soaking basin which receives the liner 10. Furthermore, in the illustrated embodiment, the supply location S is located on the inside face just below a top rim 4A of the basin wall 4. At this particular location, a supply end of the air discharge apparatus supports an air discharge apparatus coupler, to which the liner is connectable, in a position which is presented above a typical waterline of the soaking solution that is indicated at W.

Additionally, the soaking basin includes a heating element 8 (schematically shown) disposed in the bottom base 3 so as to be housed therein. The heating element 8 is standalone



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from the air discharge apparatus and generates heat for heating the soaking solution contained by the liner **10**.

Turning now to the liner, the liner **10** comprises a first body of plastic material **16** which is flexible. This first body of flexible plastic **16** forms an outer layer of the liner. The first body of plastic has an outer face **16A** for resting at or adjacent the inside face of the soaking basin **2**. That is, the outer face **16A** of the first plastic body may be rested at the inside face of the soaking basin and thus in engagement therewith. The first body of plastic may also be rested in the soaking basin but with the body's outer face **16A** adjacent the inside face of the soaking basin so as to be in spaced relation relative thereto (such that, for example, an additional element may be disposed intermediate the inside face of the soaking basin and the first body of plastic). Furthermore, the first body of plastic has an inner face **16B** opposite to its outer face **16A**.

The liner includes a second body of plastic material **18**, which is also flexible, joined to the inner face **16B** of the first body of plastic. Thus, the second body of flexible plastic forms an inner layer of the liner, with the inner face **16B** of the first outer plastic layer forming an interface **I** between the outer and inner layers. The second body of plastic lines an inside volume of the receptacle formed by the liner **10**.

As noted earlier, the first and second bodies of plastic **16**, **18** are shaped to form the generally basin-shaped receptacle for holding the soaking solution in the inside volume of the liner. The liner may be pre-shaped so as to more readily conform to a shape of the soaking basin **2** provided by the bottom base **3** and the peripheral basin wall **4**. Also, 'basin-shaped' refers to a structure having a bottom and an upstanding wall extending upwardly from the bottom about its periphery so as to form a container. The periphery may be circular or rectangular in shape, for example, and is thus not intended to be limited in its specific shape.

It will be appreciated that the liner **10**, as a whole, may be significantly flexible so as to be like a garbage bag, where the liner conforms to a shape of the soaking basin when the liner is nested therein. Alternatively, the liner **10** may be of a hard shell variety such that the liner takes on the shape of the soaking basin free of any structural support provided by the soaking basin.

In the illustrated embodiment, the first and second bodies of plastic are joined at the interface **I** by heat sealing the two bodies **16**, **18** together to one another. As such, both the first and second bodies comprise suitable thermoplastic material, which is also sufficiently resistant to heat so as to not melt when the heating element **8** is operated for heating the soaking solution. Through heat sealing, the two bodies of plastic are permanently coupled to one another at predetermined areas of the interface **I**. Also, certain prescribed areas between the first and second bodies of plastic **16**, **18** are left untreated by the heat sealing process so that the two bodies of plastic are not welded together at these prescribed areas and are thus free to separate from direct engagement with one another thereat.

Thus, an air conduit **20** is formed between the first and second bodies of plastic at these prescribed areas where the two bodies of plastic are not affixed to one another. In the illustrated embodiment, the air conduit **20** extends from a starting end **21** located at a top free end **14A** of the receptacle wall, and across the receptacle wall **14** to the base floor **12**. That is, the air conduit's starting end **21** is spaced just below a common free end of the first and second bodies of plastic so that a sealed interface is located between the common free end of the bodies to a side of the starting end **21** of the air conduit. As such, the air conduit **20** spans a full height of the

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receptacle wall **14** and across a majority of a transverse width of the base floor **12**. The air conduit **20** is suited for guiding the pressurized air supplied by the air discharge apparatus **6** to the base floor of the liner. Accordingly, the air conduit has a coupling arrangement **22** at the respective starting end **21** of the air conduit for connecting to the air discharge apparatus, which will be described in greater detail later.

Turning to the air conduit in more detail, the air conduit **20** comprises a plurality of supply branches—more specifically, a pair of supply branches **23A** and **23B** in the illustrated arrangements—which converge with a discharge portion of the air conduit at its terminal end that is located at the base floor **12** of the liner for discharging the air into the liner's inside volume as it will become apparent shortly.

In the first arrangement as more clearly shown in FIG. **1A**, the discharge portion of the air conduit forms a centralized closed loop **24** at the base floor. The closed loop is rectangular in shape in the illustrated arrangement; however, in alternative embodiments, the closed loop may comprise any polygonal shape, for example a circle, a hexagon, or a polygon with sides of non-uniform length so as to be generally annular. Furthermore, in alternative embodiments the closed loop may be shaped so as to form an outline of a logo or an aesthetically pleasing pattern. The supply branches **23A**, **23B** converge with the closed loop at spaced locations separately of one another, and at a common side of the closed loop **24**. Thus, the closed loop **24** comprises an intermediate portion **24A** between junctions of the respective supply branch with the closed loop, and an outer ring portion **24B** which is longer in length than the intermediate portion of the closed loop.

In another arrangement as shown in FIG. **1B**, the discharge portion forms a single centralized chamber **24'** fed by two supply branches **23A**, **23B** which meet the chamber at spaced locations at its perimeter. As such, the air conduit enlarges in cross-section from the relatively narrow supply branches **23A** or **23B** into the much wider chamber **24'** at the air conduit's terminal end. That is, the chamber has a larger wall-to-wall width than either one of the supply branches as measured diametrically across same in transverse cross-section. In the illustrated arrangement, the chamber **24'** is localized to the base floor **12** of the liner but covers a relatively large area thereof. Note that in other arrangements having the single chamber **24'**, the air discharge apparatus may comprise a plurality of individual units such as a plurality of suitable air pumps to provide sufficient pressure through the air conduit.

In order to complete the transfer of the pressurized air from the air discharge apparatus **6** and through the air conduit **20** into the inside volume of the liner such as to provide a fluid massage of the user's feet inserted in the soaking solution, a plurality of openings **26** are provided, being located in the second body of plastic **18**. In the illustrated embodiment, the openings **26** are aligned with the air conduit **20** so as to be disposed at spaced positions along the air conduit's length. More specifically, the openings **26** are spaced along the closed loop **24** of the air conduit and spaced across the plan area of the chamber **24'** in two dimensions. The two example arrangements of the discharge portion of the air conduit may provide different bubble patterns for the fluid massage of the foot spa. As schematically shown in FIGS. **2A**, **2B** and **3**, these openings are formed across a full thickness of the second body of plastic **18**, such that the second body of plastic can be considered to be perforated.



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With the openings 26 in the second body of plastic 18, the first body of plastic 16 is imperforate from a location on the first plastic body at which the starting end 21 of the air conduit is disposed to the free end of the first plastic body that defines the top free end 14A of the peripheral liner wall. That is, with the exception of an aperture 27 in the first plastic body for passing the air discharge apparatus coupler therethrough for connecting to the air conduit 20, which is located at the top free end 14A of the liner wall above the typical waterline W of the soaking solution, the first body of plastic is imperforate across a remaining surface area thereof (both the outer and inner faces 16A, 16B thereof) so as to completely isolate the soaking solution containable by the liner from the soaking basin 2. In other words, the first body of plastic is imperforate in all directions across its surface from the aperture 27 in the first plastic body to the peripheral top free end of the liner wall. Note that the aperture 27 defines a predetermined starting location on the first body of plastic generally locating the starting end of the air conduit.

Further to the lack of openings or apertures in the first body of plastic, the coupling arrangement 22 provides an air-tight seal at a point of connection between the air conduit 20 and the air discharge apparatus 6. As shown in FIG. 2A, the coupling arrangement comprises a sealing gasket 22 such as an O-ring that is embedded in the first body of plastic 16 so as to be carried at the inner face 16B of the first plastic body by the first plastic body. The air discharge apparatus coupler, which carries a nozzle on its end in the illustrated embodiment, may fit snugly through the sealing gasket 20 and deliver the pressurized air from the air discharge apparatus 6 into the air conduit 20.

FIG. 2B illustrates another arrangement of liner, and more specifically one in which a different coupling arrangement is employed. That is, in this liner arrangement of FIG. 2B the coupling arrangement comprises a flexible tube 22' which is coupled at the free end 14A of the two bodies of plastic so as to extend the air conduit 20 from the starting end 21 thereof to the supply location S of the air discharge apparatus, which may be presented on the top rim 4A of the peripheral basin wall. A sealing gasket is disposed at or adjacent a free end of the flexible tube 22', which is opposite the starting end 21 of the air conduit. The sealing gasket as illustrated in FIG. 2B is disposed in a closed end wall of the flexible tube. In other arrangements, the sealing gasket may be disposed in a circumferential peripheral wall of the flexible tube 22'. The flexible tube 22', where it is attached to the first and second bodies of plastic 16', 18 may be joined to the plastic bodies such as by heat sealing so that the flexible tube and plastic bodies are effectively unitary. In other arrangements, the flexible tube may comprise an extension of each of the first and second bodies of plastic that is sealed together to form the flexible tube. Also, it will be appreciated that in the arrangement as shown in FIG. 2B, the first body of plastic 16' is imperforate across its entire surface area. In this instance, the predetermined starting location on the first body of plastic for the starting end 21 of the air conduit is located along the free end 14A of the respective plastic body such that the starting location is defined by a portion of the edge of the plastic body.

Since the first and second bodies of plastic are flexible, circumferential or perimeter walls of the air conduit 20 are flexible. That is, a top portion of the walls of the air conduit is defined by an inner face 18A of the second body of flexible plastic, which forms the interface with the inner face 16B of the first body of plastic. Furthermore, a bottom portion of the walls of the air conduit is defined by the inner face 16B of the first body of flexible plastic. As such, a diameter of the

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air conduit 20, as measured between the inner faces 16B, 18A of the first and second bodies of plastic, is expandable in response to a pressure value of the pressurized air which is passed through the air conduit. That is, when no air is passed through the air conduit, the air conduit may be in a first contracted state with a small, first diameter value. When air from the air discharge apparatus 6 is passed through the air conduit, the air conduit may dilate from the first contracted state to a second dilated/expanded state with a larger, second diameter value. With increasing pressure of the pressurized air from the air discharge apparatus 6, the air conduit may further expand with respect to the second diameter value. As such, diameter of the air conduit 20 may change in size with the particular pressure value of the pressurized air from the air discharge apparatus, between a minimum diameter when no air is passed through the air conduit (as in the contracted state) to a maximum diameter attained at a particular pressure value (after which the air conduit's diameter no longer increases with rising pressure values which are larger than this particular pressure value).

Thus, through use of flexible plastics, sufficient pressure may be maintained along a length of the air conduit 20 so as to resist back pressure of the soaking solution and thus provide sustained transfer of the pressurized air from the air discharge apparatus 6, through the air conduit 20, and into the inside volume of the liner where the soaking solution may be contained.

Although the air conduit's diameter may vary in size depending on the pressure value of the air passed there-through, the diameter of the air conduit 20 lies in a prescribed size range in order to provide the sustained transfer of the pressurized air throughout operation of the foot spa. The air conduit's diameter may lie in a first prescribed range between 1 and 25 millimetres for proper functionality. The diameter of the air conduit may also lie in a second prescribed range between 1.5 and 23 millimetres and provide similar functionality to the first prescribed range. Additionally, the diameter of the air conduit may lie in a third prescribed range between 2 and 20 millimetres and provide similar functionality to either one of the first and second prescribed ranges.

As alluded to earlier in this specification, the liner according to the present invention is suited for containing the soaking solution within the soaking basin as part of a pedicure treatment, in which the user's feet are soaked in the soaking solution for a prescribed period of time. The liner 10 according to the present invention provides isolation of the soaking solution from the soaking basin 2 and provides means for generating a fluid massage by releasing a stream of bubbles via an air conduit 20 formed in the liner 10.

In use, one such liner 10 according to the present invention is inserted into the soaking basin 2 of the foot spa so as to be installed therein. The first body of plastic 16 rests at or adjacent the inside face of the soaking basin 2, and the second body of plastic 18 is thus segregated from the inside face of the soaking basin by the first plastic body. Additionally, it is noted that the base floor 12 of the liner covers the inside face of the soaking basin at the bottom base 3 thereof and the peripheral liner wall 14 covers the inside face at the peripheral basin wall 4.

The liner is filled with the soaking solution to the typical waterline W, which is below the starting end 21 of the air conduit. The air discharge apparatus 6 is operated so as to deliver the pressurized air to the closed loop 24 through both supply branches 23A and 23B in parallel. Bubbles are discharged from the openings 26 in the closed loop 24 as the air passes from inside the air conduit 20 to the inside volume

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of the liner **10** where the soaking solution is contained. After use in the pedicure treatment, the liner **10** is removed from the soaking basin **2** and the soaking solution is emptied therefrom so that used liner can be discarded.

We now turn to the method of forming the liner of the illustrated liner arrangements in further detail. Each one of the first and second bodies of plastic **16**, **18** have a respective surface area spanning across two opposite large faces of the plastic and a thickness measured therebetween. The large faces, indicated at **16A** and **16B** for the first plastic body and at **18A** and **18B** for the second plastic body, are delimited by a peripheral body edge **28**. Furthermore, in the illustrated arrangements of FIGS. **4** and **5**, each one of the large faces defines the respective one of the inner and outer face of the respective body of plastic **16**, **18**.

In the illustrated arrangement of FIGS. **4** and **5**, each one of the first and second bodies of plastic **16**, **18** also has a central body portion indicated at **30** and **31** respectively, which comprises a centrally located area of the respective body that is surrounded by a fringing body portion indicated at **32** and **33** respectively. The fringing body portion **32**, **33** comprises a bordering area of the respective plastic body that encloses the central body portion **30**, **31**.

Additionally, in the illustrated arrangement of FIGS. **4** and **5**, the first and second bodies of plastic are sized and shaped in a manner so as to be substantially uniform in size (i.e., equal in size to one another) and generally matching in shape. That is, the first and second bodies of plastic **16**, **18** are identical in shape, and nearly identical in size such that the inner layer of the two (i.e., the second body of plastic **18** of the illustrated embodiment) is slightly smaller than the outer layer (i.e., the first body of plastic **16** of the illustrated embodiment).

Typically, the first and second bodies of plastic **16**, **18** are provided ready-to-go, that is with the appropriate openings formed at the appropriate locations on the respective body. That is, the first body of plastic **16** has at least one aperture **27** (more specifically two apertures in the illustrated embodiment) formed across its full thickness and located in its fringing body portion **32**. In the illustrated embodiment, the at least one aperture **27** is located at or adjacent a free end of the first plastic body, without intersecting the peripheral body edge **28** so that an amount of plastic is disposed in all directions around the respective aperture. Furthermore, the second body of plastic **18** has the plurality of openings **26** located in its central body portion **31**.

When the first and second bodies of plastic are brought together before coupling together, the central body portions **30** and **31** of the two plastic bodies register with one another and the fringing body portions **32** and **33** of the two plastic bodies register with one another. That is, the corresponding one of the central body portion and the fringing body portion of one plastic body is aligned with that of the other plastic body, so that they overlap one another in their aligned configuration as better shown in FIG. **5**.

Once in the aligned configuration, the first and second bodies of plastic are welded (in other words, fused) to one another at a first one of their respective faces **16B** and **18A**. To perform the welding, heat is used to melt the plastic bodies together, and the heat is applied according to a prescribed heating pattern. That is, the heat is applied to pre-specified areas **36** of each body of plastic where the bodies of plastic are intended to be joined together. For example, a heat applicator with suitable heating control, generally in the form of a heat gun, is brought in sufficiently close proximity to the bodies of plastic and is moved over the bodies of plastic according to the prescribed heating

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pattern; this heat applicator may be carried on a track system supported over a working area where the plastic bodies **16**, **18** are placed such that the heat applicator is movable in a plane over the working area and computer controlled in order to apply the heat according to the prescribed heating pattern. Untreated areas **38** of each body of plastic are thus free to separate from direct engagement with one another at their first faces **16B**, **18A**. These untreated areas **38** also register with the at least one opening **27** in the first body of plastic **16** and the plurality of openings **26** in the second of body of plastic **18**. Thus, the untreated areas form a path disposed between the first faces **16B**, **18A** of the two bodies of plastic that spans from the at least one opening **27** in the fringing body portion **32** of the first body of plastic, which is located at or adjacent a common free end of the joined bodies of plastic, to the plurality of openings **26** in the central body portion **31** of the second plastic body. This path forms the air conduit **20** of the liner.

In particular, at the location on the first and second bodies of plastic where the respective aperture **27** in the first body of plastic is disposed, the two bodies of plastic are joined across the surface of their first faces **16B**, **18A** that is disposed between a periphery of the respective aperture and the peripheral body edge **28** of the plastic bodies so as to close the air conduit **20** in the area between the first faces of the bodies of plastic such that the respective aperture **27** defines the only passageway from outside the joined bodies of plastic into the air conduit **20**.

As part of the manufacturing process, the first and second bodies of plastic are also arranged in a manner such that they can be formed into the receptacle having the base floor **12** and the upstanding peripheral liner wall **14**. For example, the first and second bodies **16**, **18** when joined together may be shaped into the form of the receptacle. The shaping of the first and second bodies may be fixed when the liner is made as the hard shell type, and the shaping may alternatively be pliable when the liner is made to be like a garbage bag. Regardless of the specific type of liner manufactured, the central body portions **30**, **31** of the two plastic bodies form the base floor **12** and the fringing body portions **32**, **33** form the peripheral liner wall **14**. That is, the central body portions are located at the base floor, and the fringing body portions are located at the liner wall. Thus, the central body portions of the plastic bodies may extend up across a portion of the peripheral liner wall so as to occupy some area of the liner wall in some embodiments, and alternatively the fringing body portions may extend down across a portion of the base floor so as to occupy some area of the base floor in some other embodiments. Furthermore, with the at least one aperture **27** in the first body of plastic located at or adjacent its free end that defines the top free end **14A** of the liner wall, the at least one opening is therefore located near a top of the soaking basin **2** as better shown in FIG. **2** so as to be at or above the typical waterline **W** of the soaking solution. According to this arrangement, the untreated areas **38** extend from a location at or adjacent the top free end **14A** of the peripheral liner wall **14** that is defined by the common free end of the joined plastic bodies, and across the peripheral liner wall to the base floor where the untreated areas form the closed loop **24** thereat.

Additionally, for the appropriate arrangement, a sealing gasket **22** is embedded in the first body of plastic **16** such that the sealing gasket is carried at the first face **16B** thereof. The sealing gasket provides an air-tight seal for the air discharge apparatus coupler when same is communicated with the air conduit **20**.

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In the other arrangement of the liner as shown in FIG. 2B, the flexible tube 22' is held in abutting engagement with the free end 14A of the two plastic bodies 16, 18 and thus welded using heat to the free end 14A in the abutting engagement therewith.

FIG. 6 shows an alternate arrangement in which the second body of plastic 18', which locates the openings 26, is shaped to have an outer periphery 28' which generally follows a path of the air conduit 20. In this alternate arrangement, the second of plastic 18' includes an inner periphery 40' which follows an inner perimeter of the air conduit at the closed loop 24. Thus, the second body of plastic 18' is sized in its surface area so as to cover the air conduit 20 with minimal overlap with the first face of the first body of plastic 16. Thus, the interface I between the first and second bodies of plastic that defines the pre-specified areas to which heat is to be applied is limited to that along the outer and inner peripheries 28', 40' of the second body of plastic at the second body's first face 18A. The minimal overlap is enough to form a suitable weld connection between the two bodies of plastic so that the air conduit is sealed along the outer and inner peripheries of the second plastic body. As such, a remaining surface area of the first plastic body's first face 16B including portions of the central body portion 30 thereof and the fringing body portion 32 thereof is left uncovered by the second body of plastic so as to be exposable to the soaking solution. It will be appreciated that the air conduit 20 traverses an area across the surface area of the first body of plastic 16 which is typically much smaller than same. That is, an overall area over which the air conduit spans, even if that delimited by the closed loop 24 is included within the overall area, is smaller than the surface area of the first plastic body such that there a portion of the first plastic body's surface area remains uncovered by the second plastic body 18'.

Note that in alternative embodiments, the liner may include more than two bodies of plastic forming more than two layers of the liner. For example, an additional body of plastic may be joined to the outer face 16A of the first plastic body of the illustrated embodiment so as to form an outer layer in relation thereto. This additional body of plastic may be imperforate in a similar manner as the first body of plastic of the illustrated arrangements. That is, with the exception of an aperture in the additional body of plastic for passing the air discharge apparatus coupler therethrough, the additional body of plastic is imperforate from a location thereon at which the starting end of the air conduit is disposed to the free end of the additional plastic body that defines the top free end 14A of the peripheral liner wall. In another example, an auxiliary plastic body may be provided so as to be joined to the outer face 18B of the second body of plastic of the illustrated embodiment that is opposite the second plastic body's inner face 18A. The auxiliary plastic body has openings formed across its full thickness and aligned with the openings 26 of the second plastic body of the illustrated embodiment so that the pressurized air passes from the air conduit 20, through the openings 26 in the second body and through the openings in the auxiliary plastic body to the inside volume of the liner receptacle.

Furthermore, it will be appreciated that the soaking basin 2 is typically used in combination with a seat 100 receiving a patient of the pedicure treatment in seating position thereon with the feet of the patient presented forwardly of the seat. The soaking basin 2 is located in front of the seat 100 such that the feet of the patient are received therein. The soaking basin and seat may be integrated together in the form of a spa chair 102, like that illustrated in FIG. 7, which

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includes a backrest 104 and arm rests 106. FIG. 7 shows the air discharge apparatus 6 disposed externally of an enclosure 102A of the spa chair and suitable tubing stemming from the air discharge apparatus to deliver the air to the supply location S. However, in other arrangements the air discharge apparatus may be contained within the enclosure 102A.

Since various modifications can be made in my invention as herein above described, and many apparently widely different embodiments of same made, it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense.

The invention claimed is:

1. A liner comprising:

a first body of flexible plastic having an inner face and an opposing outer face, the first body of flexible plastic having a base and a wall extending from the base configured to form a receptacle to be placed in a basin for containing a liquid such that the outer face of the first body of flexible plastic rests against an inside surface of the basin thereby delimiting an interior volume of the receptacle for containing liquid in the basin and isolating the liquid from the basin;

a second body of flexible plastic joined to the inner face of the base of the first body of flexible plastic, the second body of flexible plastic forming an air conduit along the base, the second body of flexible plastic having a plurality of openings therethrough which provide a fluid pathway from the air conduit to the interior volume of the receptacle; and

a flexible tube having a first end and a free end, the first end attached to the second body of flexible plastic such that the first end is in fluid communication with the air conduit, and the free end configured to be coupled to a source of pressurized air.

2. The liner of claim 1, wherein the free end of the flexible tube is not attached to first body of flexible plastic or the second body of flexible plastic.

3. The liner of claim 1, wherein the second body of flexible plastic has a surface area which is sized so as to form the air conduit with minimal overlap with the inner face of the first body of flexible plastic.

4. The liner of claim 3, wherein the second body of flexible plastic is shaped to have an outer periphery which follows a path of the air conduit.

5. The liner of claim 4, wherein the second body of flexible plastic is joined to the inner face of the first body of flexible plastic along the outer periphery of the second body of flexible plastic.

6. The liner of claim 1, wherein the second body of flexible plastic is joined to the inner face of the first body of flexible plastic by welding.

7. The liner of claim 1, wherein the second body of flexible plastic is joined to the inner face of the first body of flexible plastic by heat-welding.

8. The liner of claim 1, wherein the first end of the flexible tube is attached to the second body of flexible plastic by heat-welding.

9. The liner of claim 1, wherein the first body of flexible plastic is imperforate.

10. The liner of claim 1, wherein the air conduit has a diameter sized in a range from 1 to 25 millimeters.

11. The liner of claim 1, wherein the air conduit forms a closed loop path.

12. A disposable liner for containing a soaking solution in a soaking basin of a foot spa, the liner comprising:

a first body of flexible plastic having an inner face and an opposing outer face, the first body of flexible plastic

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having a base and a wall extending from the base configured to form a receptacle configured to be placed in the soaking basin for containing the soaking solution such that the outer face of the first body of flexible plastic rests against an inside surface of the soaking basin thereby delimiting an interior volume of the receptacle for containing liquid in the soaking basin and isolating the liquid from the soaking basin;

a second body of flexible plastic joined to the inner face of the base of the first body of flexible plastic, the second body of flexible plastic forming an air conduit along the base, the second body of flexible plastic having a plurality of openings therethrough which provide a fluid pathway from the air conduit to the interior volume of the receptacle, the second body of flexible plastic shaped to have an outer periphery which follows a path of the air conduit; and

a flexible tube having a first end and a free end, the first end attached to the second body of flexible plastic such that the first end is in fluid communication with the air conduit, and the free end configured to be coupled to a source of pressurized air.

**13.** The disposable liner of claim **12**, wherein the free end of the flexible tube is not attached to first body of flexible plastic or the second body of flexible plastic.

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**14.** The disposable liner of claim **12**, wherein the second body of flexible plastic is attached to the inner face of the first body of flexible plastic along the outer periphery of the second body of flexible plastic.

**15.** The disposable liner of claim **12**, wherein the second body of flexible plastic has a surface area which is sized so as to form the air conduit with minimal overlap with the inner face of the first body of flexible plastic.

**16.** The disposable liner of claim **12**, wherein the second body of flexible plastic is attached to the inner face of the first body of flexible plastic by heat-welding.

**17.** The disposable liner of claim **12**, wherein the first end of the flexible tube is joined to the second body of flexible plastic by heat-welding.

**18.** The disposable liner of claim **12**, wherein the first body of flexible plastic is imperforate.

**19.** The disposable liner of claim **12**, wherein the air conduit has a diameter sized in a range from 1 to 25 millimeters.

**20.** The disposable liner of claim **12**, wherein the air conduit forms a closed loop path.

\* \* \* \* \*



EXHIBIT 2

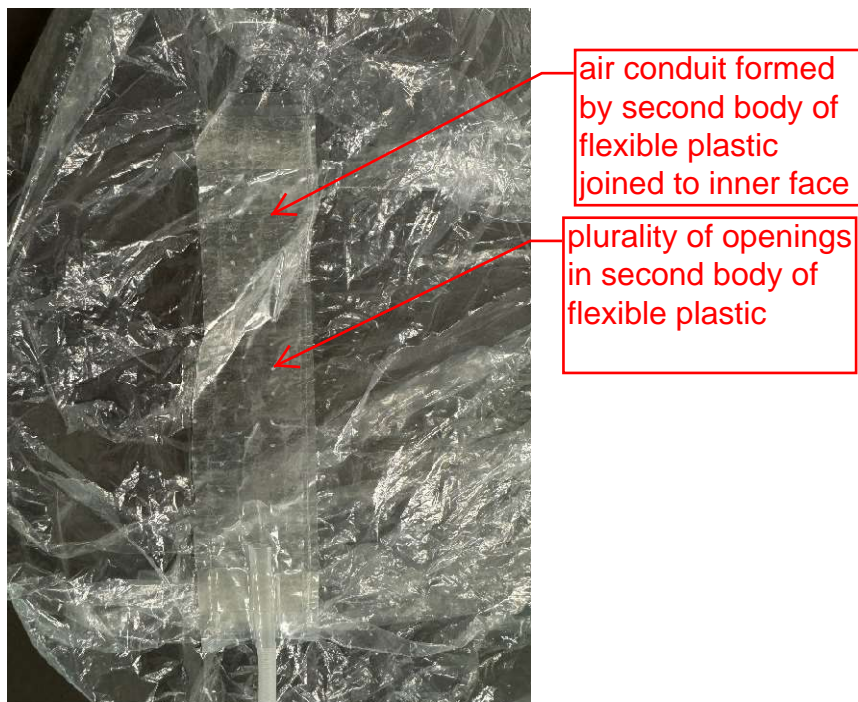
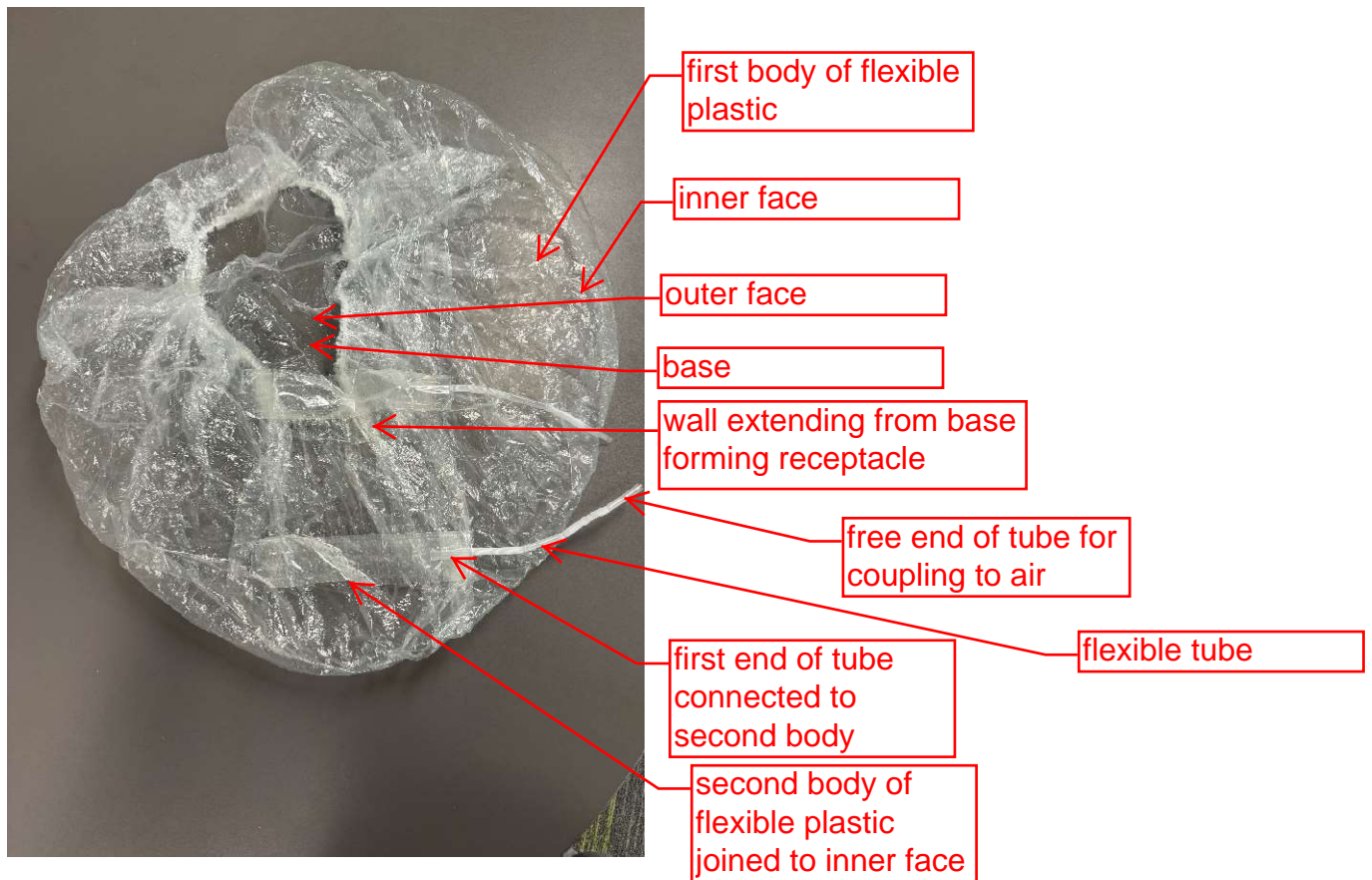


EXHIBIT 2 (cont.)



air conduit formed  
by second body

second body of  
flexible plastic  
joined to inner face  
of first body

plurality of openings  
in second body  
provide fluid  
pathway to interior  
volume of  
receptable

EXHIBIT 3



Salon spa pedicure  
chair at Goldust  
Nail Lounge

Accused Product  
inserted into basin

basin of chair



EXHIBIT 3 (cont.)

